WHAT IS CLAIMED IS:

1.   A system, comprising:

5   a plurality of nodes, wherein each node of the plurality of nodes includes a
plurality of active devices coupled by an address network and a data
network;

an inter-node network configured to convey coherency messages between each of
10   the plurality of nodes;

wherein the plurality of nodes implement a coherency protocol such that if an
active device in one of the plurality of nodes has an ownership
responsibility for a coherency unit, no active device in any other one of the
15   plurality of nodes has a valid access right to the coherency unit.

2.   The system of claim 1, wherein in response to the one of the plurality of nodes
receiving via the inter-node network a coherency message indicating that an active device
included in another one of the plurality of nodes is requesting a read access right to the
20   coherency unit, the active device in the one of the plurality of nodes is configured to lose
the ownership responsibility for the coherency unit and to transition a write access right
for the coherency unit to a read access right.

3.   The system of claim 2, wherein the one of the plurality of nodes is configured to
25   convey a proxy address packet on the address network included in the one of the plurality
of nodes in response to receiving the coherency message, wherein the active device in the
one of the plurality of nodes is configured to lose the ownership responsibility for the
coherency unit upon receipt of the address packet from the address network.

4.   The system of claim 3, wherein the active device in the one of the plurality of nodes is configured to send a data packet corresponding to the coherency unit on the data network included in the one of the plurality of nodes in response to receiving the address packet, wherein the active device in the one of the plurality of nodes is configured to transition the write access right to the read access right upon sending the data packet.

5.   The system of claim 4, wherein the one of the plurality of nodes is configured to provide data corresponding to the coherency unit to the other one of the plurality of nodes in response to the data packet on the data network.

6.   The system of claim 2, wherein in response to another active device included in the one of the plurality of nodes requesting a read access right to the coherency unit while the active device has the ownership responsibility for the coherency unit, the active device in the one of the plurality of nodes is configured to provide the other active device with data corresponding to the coherency unit and to retain the ownership responsibility for the coherency unit.

7.   A system, comprising:

a node including a plurality of active devices and an interface coupled by an address network and a data network;

an inter-node network configured to convey coherency messages between the interface in the node and an additional interface in an additional node, wherein the additional interface is configured to send a coherency message requesting a read access right to a coherency unit on the inter-node network;

wherein the interface is configured to respond to the coherency message by sending a proxy address packet on the address network;

wherein one of the plurality of active devices is configured to request a read
5   access right to another coherency unit by sending an address packet on the address network;

wherein an active device of the plurality of active devices has an ownership responsibility for the coherency unit and an ownership responsibility for
10   the other coherency unit, wherein the active device is configured to not transition the ownership responsibility for the other coherency unit in response to the address packet and to transition the ownership responsibility for the coherency unit in response to the proxy address packet.
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8.   The system of claim 7, wherein the additional interface in the additional node is configured to send the coherency message in response to an additional active device included in the additional node requesting a read access right to the coherency unit.

20 9.   The system of claim 8, wherein the additional active device is configured to request the read access right to the coherency unit by sending an additional address packet on an additional address network included in the additional node.

10.   The system of claim 8, wherein the active device is configured to send a data
25 packet corresponding to the coherency unit on the data network in response to receiving the proxy address packet, wherein the interface included in the node is configured to send data corresponding to the coherency unit to the additional interface via the inter-node network in response to the data packet on the data network.

11.   The system of claim 10, wherein the additional interface is configured to send an additional data packet corresponding to the coherency unit on an additional data network included in the additional node in response to receiving the data via the inter-node network.

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12.   The system of claim 11, wherein the additional active device is configured to gain the read access right to the coherency unit in response to receiving the additional data packet from the additional data network.

10   13.   The system of claim 10, wherein the active device is configured to transition an access right to the coherency unit in response to sending the data packet on the data network.

14.   The system of claim 7, wherein the address packet is a read-to-share packet and
15   wherein the proxy address packet is a proxy read-to-share-modified packet.

15.   The system of claim 7, wherein no active device in any of the plurality of nodes has an ownership responsibility for the coherency unit subsequent to receipt of the proxy address packet by the active device.

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16.   The system of claim 7, wherein if any active device in one of the plurality of nodes has an ownership responsibility for a particular coherency unit, no active device in any other one of the plurality of nodes has a valid access right to the particular coherency unit.

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17.   The system of claim 7, wherein if any active device in one of the plurality of nodes has a read access right to the particular coherency unit, no active device in any other one of the plurality of nodes has a write access right to the particular coherency unit.

30   18.   A node for use in a multi-node system, the node comprising:

an address network and a data network;

a plurality of active devices coupled to send and receive packets on the address

5   network and the data network; and

an interface to an additional node in the multi-node system, wherein the interface
is coupled to send and receive packets on the address network and the data
network, wherein the interface is configured to receive a coherency

10   message from the additional node via the inter-node network, wherein the
coherency message requests a read access right to a coherency unit;

wherein the interface is configured to respond to the coherency message by
sending a proxy address packet on the address network;

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wherein one of the plurality of active devices is configured to request a read
access right to another coherency unit by sending an address packet on the
address network;

20   wherein an active device of the plurality of active devices has an ownership
responsibility for the coherency unit and an ownership responsibility for
the other coherency unit, wherein the active device is configured to not
transition the ownership responsibility for the other coherency unit in
response to the address packet and to transition the ownership

25   responsibility for the coherency unit in response to the proxy address
packet.

19.   The node of claim 18, wherein the active device is configured to send a data
packet corresponding to the coherency unit on the data network in response to receiving

30   the proxy address packet, wherein the interface included in the node is configured to send

data corresponding to the coherency unit to the additional node via the inter-node network in response to the data packet on the data network.

20. The node of claim 19, wherein the active device is configured to transition an access right to the coherency unit in response to sending the data packet on the data network.

21. The node of claim 18, wherein the address packet is a read-to-share packet and wherein the proxy address packet is a proxy read-to-share-modified packet.

22. A method for use in a multi-node system comprising a node and an additional node coupled by an inter-node network, the method comprising:

the additional node sending a coherency message requesting a read access right to a coherency unit on the inter-node network;

in response to receiving the coherency message, an interface included in the node sending a proxy address packet on an address network included in the node;

an active device included in the node losing an ownership responsibility for the coherency unit in response to the proxy address packet;

one of a plurality of active devices included in the node requesting a read access right to another coherency unit by sending an address packet on the address network;

the active device maintaining an ownership responsibility for the other coherency unit in response to the address packet.

23.   The method of claim 22, further comprising an additional interface included in the additional node sending the coherency message in response to an additional active device included in the additional node requesting the read access right to the coherency unit.

5   24.   The method of claim 23, wherein said additional node requesting comprises the additional active device sending an additional address packet on an additional address network included in the additional node.

25.   The method of claim 23, further comprising:

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the active device sending a data packet corresponding to the coherency unit on a data network included in the node in response to receiving the proxy address packet; and

15   the interface included in the node sending data corresponding to the coherency unit to the additional interface via the inter-node network in response to the data packet on the data network.

26.   The method of claim 25, further comprising the additional interface sending an

20   additional data packet corresponding to the coherency unit on an additional data network included in the additional node in response to receiving the data via the inter-node network.

27.   The method of claim 26, further comprising the additional active device gaining

25   the read access right to the coherency unit in response to receiving the additional data packet from the additional data network.

28.   The method of claim 25, further comprising the active device transitioning an access right to the coherency unit in response to sending the data packet on the data

30   network.

29.   The method of claim 22, wherein the address packet is a read-to-share packet and wherein the proxy address packet is a read-to-share-modified packet.

30.   A node for use in a multi-node system, the node comprising:

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means for communicating address packets;

a means for caching coherency units coupled to the means for communicating address packets; and

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means for sending and receiving coherency messages from an additional node in the multi-node system, wherein the means for sending and receiving are coupled to the means for communicating;

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wherein the means for sending and receiving is configured to receive a coherency message from the additional node requesting read access to a coherency unit, wherein the means for sending and receiving is configured to respond to the coherency message by sending a proxy address packet on the means for communicating;

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wherein one of the means for caching coherency units is configured to request a read access right to another coherency unit by sending an address packet on the means for communicating;

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wherein another one of the means for caching coherency units has an ownership responsibility for the coherency unit and an ownership responsibility for the other coherency unit, wherein the other one of the means for caching coherency units is configured to not transition the ownership responsibility for the other coherency unit in response to the address packet and to

transition the ownership responsibility for the coherency unit in response to the proxy address packet.

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